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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/105,572	06/26/1998	DOUGLAS W. HALL	CORN-0002	5745

7590

10/21/2002

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EXAMINER

SANGHAVI, HEMANG

ART UNIT

PAPER NUMBER

2874

DATE MAILED: 10/21/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application N .

09/105,572

Applicant(s)

HALL ET AL.

Examiner

Hemang Sanghavi

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 08 July 2002.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 21-50 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 21-50 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

**Priority under 35 U.S.C. §§ 119 and 120**

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

**Attachment(s)**

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) \_\_\_\_\_.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

## DETAILED ACTION

Applicant's arguments regarding claims 21-50 have been fully considered but are not deemed to be persuasive. See the detailed discussion in the remarks section.

### ***Estoppel***

Claims 21, 22, 30, 32-34, and 37-38 are rejected as unpatentable over the lost count 1 on the grounds of estoppel.

The lost Count I:

A fiber amplifier comprising

a gain optical fiber having a single-mode core containing dopant ions capable of producing stimulated emission of light within a predetermined band of wavelengths including a wavelength  $\lambda_s$  when pumped with light of wavelength  $\lambda_p$ , said gain fiber having input and output ends,

absorbing ion filtering means for attenuating light at at least some of the wavelengths within said predetermined band of wavelengths, said absorbing ion filtering means comprising unpumped gain ions,

means for introducing a signal of wavelength  $\lambda_s$  into said gain fiber input end,

means introducing pump light of wavelength  $\lambda_p$  into said gain fiber, and

means for preventing the excitation of said pumped gain ions by light of wavelength  $\lambda_p$ .

Claims 1, 2, 10, 12-14, 17, and 18 correspond to the lost count 1.

A review of the newly added claims (21, 22, 30, 32-34, 37-38) in this reissue application shows that they recite subject matter falling within the bounds of the lost count 1 in the interference proceeding, subsequently these claims are rejected on the grounds of estoppel.

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The only difference between these claims and the count 1 is that the gain fiber is limited to a fiber "having **only one** single-mode core" in contrast to the count 1 which includes a gain fiber "having **a** single-mode core".

The lost count 1 certainly anticipates gain fiber having **only one** single-mode core as claimed in claims 21 and 37 of this reissue application, since the lost count 1 do not refer to a multiple cores and clearly refers to a gain optical fiber having a single mode core.

Claims 22, 30, 32, 34, and 38 are identical to claims 2, 10, 12-14, and 18, respectively. Since claims 2, 10, 12-14 and 18 correspond to lost count 1 of the interference proceeding, subsequently these claims are rejected on the grounds of estoppel.

*35-36 and*  
Claims <sup>35-36 and</sup>39-40 are rejected as unpatentable over the lost count 2 on the grounds of estoppel.

The lost Count 2:

A fiber amplifier comprising

a gain optical fiber having a single-mode core containing dopant ions capable of producing stimulated emission of light within a predetermined band of wavelengths including a wavelength  $\lambda_s$  when pumped with light of wavelength  $\lambda_p$ , said gain fiber having input and output ends, said dopant ions being selected from the group consisting of erbium, neodymium and praseodymium,

filtering means for attenuating light at at least some of the wavelengths within said predetermined band of wavelengths, said filtering means containing a dopant selected from the group consisting of erbium, dysprosium, neodymium, ytterbium, samarium, praseodymium, thulium, vanadium and cadmium selenide,

means for introducing a signal of wavelength  $\lambda_s$  into said gain fiber input end, and

means introducing pump light of wavelength  $\lambda_p$  into said gain fiber.

The only difference between claim 39 and the count 2 is that the gain fiber is limited to a fiber "having **only one** single-mode core" in contrast to the count 2 which includes a gain fiber "having **a** single-mode core".

The lost count 2 certainly anticipates gain fiber having **only one** single-mode core as claimed in claim 39 of this reissue application, since the lost count 2 refers to a gain optical fiber having a single mode core.

Claim 40 is identical to claim 20. Since claim 20 correspond to the lost count 2 of the interference proceedings, claim 40 is rejected on the grounds of estoppel.

Claims 41-43 are rejected as unpatentable over the lost counts on the grounds of estoppel.

Claims 41-42 also correspond to the lost Count 1 of the interference proceeding detailed above. The difference between the interference count 1 and these claims is that these claims further define the gain spectrums of the gain fiber and ion filtering means over the wavelength bands. Performing routine experimentation, the ordinary artisan would certainly found it obvious to draw out the gain spectrums of the gain fiber and filtering means of the count 1. It is certainly inherent that the gain spectrum will have flat or un-flat response over the certain wavelengths in count 1.

Claim 43 corresponds to the lost Count 2 of the interference proceeding detailed above.

The difference between the interference count 2 and claim 43 is that this claim further defines the gain spectrums of the gain fiber and filtering means over the

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wavelength bands. Performing routine experimentation, the ordinary artisan would certainly find it obvious to draw out the gain spectrums of the gain fiber and filtering means of the count 2. It is certainly inherent that the gain spectrum will have flat or un-flat response over the certain wavelengths in count 2.

Claims 44-50 are rejected as unpatentable over the lost count 1 on the grounds of estoppel and further in view of Grasso et al (US 5,245,467).

The difference between the lost count 1 and these claims is that these claims further defines the gain spectrums in the gain filter and filtering means over the predetermined wavelength bands (i.e. peak around 1532 nm, flat gain region from 1540 nm to 1560 nm). Working wavelength band between 1530-1560 is well known in optical fiber communication art. Grasso et al (US 5,245,467) clearly shows an optical communication fiber working in the wavelength band of 1500-1600. Grasso et al, in Figs. 3-4, further simulates emission of optical fiber in terms of db and wavelength band of 1500-1600 and also describes the spectrum peak and intensity at throughout the disclosure.

Performing routine experimentation, the ordinary artisan would certainly find it obvious to draw out the gain spectrums of the gain fiber and filtering means of the count 1, according to well-known wavelength band as suggested by Grasso et al. It is certainly inherent that the gain spectrum will have flat or un-flat response over the certain wavelengths in count 1. Also, it is known in the art that the geometry of the spectrum depend upon the concentration of dopant in combination with pumping wavelength and signal wavelength. Adjusting the concentration of dopant in the count 1

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will certainly arrive at desired gain spectrum with predetermined wavelength band as claimed. Also, providing a reverse pumping and selecting source for pumping at desired wavelength is certainly within the level of ordinary skilled artisan. Since claims 44-50 correspond to the lost count 2, these claims are subsequently rejected on the grounds of estoppel.

Since claims 21-50 correspond to the lost counts of the interference proceedings, this reissue application contains no error.

The reissue declaration filed with this application is defective because the error which is relied upon to support the reissue application is not an error upon which a reissue can be based. See 37 CFR 1.175(a)(1) and MPEP § 1414.

Claims 21-50 are rejected as being based upon a defective reissue declaration under 35 U.S.C. 251 as set forth above. See 37 CFR 1.175.

The nature of the defect(s) in the declaration is set forth in the discussion above in this Office action.

Claims 44-50 are rejected under 35 U.S.C. 251 as being broadened in a reissue application filed outside the two year statutory period.

Claims 44-50 do not recite a single mode core and an excitation preventing means as claimed in original independent claim 1. Claims are narrower in some aspects, however these claims are broader in the aspect of lacking an excitation preventing means and a gain fiber with a single mode core.

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A claim is broader in scope than the original claims if it contains within its scope any conceivable product or process which would have infringed the original patent. A claim is broadened if it is broader in any one respect even though it may be narrower in other respects.

The original patent, or a statement as to loss or inaccessibility of the original patent, must be received before this reissue application can be allowed. See 37 CFR 1.178.

### ***Remarks***

The applicant's arguments are not persuasive for the following reasons.

At pages 2-3 of the response, applicant argues that the rejected claims differ from the lost interference counts in reciting that the gain fiber has "only one single mode core", whereas the counts do not recite the number of cores in the fiber but broadly cover any number of cores greater than one.

Examiner respectfully disagrees with the above statement. The lost interference counts recite "a gain optical fiber having a single-mode core" which certainly covers the claimed limitation "only one single mode core".

At page 2 of the amendment, applicant further argues that the specification of the Grasso et al patent states that an amplifier of the type being claimed when made from a "single-core" fiber was "practically useless." (Col. 9, lines 30-40, and col. 10, lines 60-61). Further the prior art clearly teaches away from an amplifier with a single core fiber.



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In contrast, it should be noted that the rejections are based on the grounds of estoppel of the lost interference counts 1 and 2 as stated above.

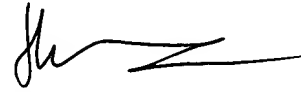
Also as to the Grasso et al patent, the reference solves problem arising of using an active optical fiber (employed as amplifier) with commercially available laser emitters for the emission of the transmission signal without important qualitative restrictions being imposed to the laser emitters (lines 15-20 of column 3 and lines 1-5 of column 11). The amplifier will be practically useless if right laser emitters are not used with the active fiber. However, if the active fiber used with the right and compatible laser emitters, the amplifier certainly would work fine. The Grasso et al patent never states that the invention will not work with only one single-mode core. It further optimizes the invention by providing the amplifier that can be easily used with commercially available laser.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Hemang Sanghavi whose telephone number is 703-305-3484. The examiner can normally be reached on Monday-Thursday (8:30 AM-6:00 PM).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Rodney Bovernick can be reached on 703-308-4819. The fax phone numbers for the organization where this application or proceeding is assigned are 703-872-9318 for regular communications and 703-872-9319 for After Final communications.

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Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0956.

A handwritten signature in black ink, appearing to read 'Hemang Sanghavi', with a long horizontal stroke extending to the right.

Hemang Sanghavi  
Primary Examiner  
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